JUN 1 1999

Mr. Richard M. Tomicek, Consultant
Solid & Hazardous Waste, EHS Services N. A.
Aluminum Company of America
201 Isabella Street
Pittsburgh, Pennsylvania 15212-5858

Dear Mr. Tomicek

By this letter, the National Program Chemicals Division (NPCD) of the U.S. Environmental Protection Agency (EPA) approves the testing of concrete core samples from the Massena Operations, Massena, New York, in conjunction with the PCB Disposal Research and Development (R&D) Approval granted November 30, 1998. This R&D approval allows Alcoa to test methods of enhancing biological degradation of PCBs in solid and water waste matrices and to test the effectiveness of surface cleaning and coating techniques on PCB contaminated concrete belonging to Alcoa. The Massena concrete core will be tested to determine the effects of various cleaning techniques on the migration and distribution of hydraulic oils in oil-contaminated concrete. Because Alcoa requires one year to complete this study, the effective date for the R&D approval is extended to December 1, 2000.

Previously, Alcoa requested approval to conduct research on cleaning and coating techniques on concrete samples, pursuant to 40 CFR 761.60(j). The concentration of PCBs in the concrete to be tested exceeded the limitation for self-implementation in 40 CFR 761.60(j)(1)(iii) and required prior written approval from EPA per § 761.60(j)(2). Alcoa is currently testing concrete floor core samples from their Vernon Works plant in California which contain PCB levels up to 11,000 ppm. Permit Condition 3.b. limited testing of concrete samples from Vernon Works in California. Alcoa requested (April 1, 1999) to perform research on concrete floor core samples from the Massena Plant in Massena, New York. Other locations which may be utilized for research include plants in Alcoa Center, Pennsylvania; Cleveland, Ohio; Riverdale, Iowa; Lafayette, Indiana; Lebanon, Pennsylvania; Alcoa, Tennessee; and Newburgh, Indiana. This approval applies to other Alcoa facilities, subject to notification to EPA of intent to perform R&D studies and to submission of EPA I.D. numbers for the other Alcoa facilities.

The proposed studies will include a series of tests to treat a total of about fifteen 8-inch diameter concrete core samples contaminated with PCBs. Alcoa will study the rate of "bleedback" of PCBs to the surface and study the effectiveness of different cleaning techniques on the rate of bleedback to the surface.

CONCURRENCES

SYMBOL	7404	7404						
SURNAME	Dodohara	[illegible]						
DATE	5/28/99	28 May 99						

HDodohara:hd/OPPT-NPCD-FOB/5-26-99/7404/260-3959/Rm ET837/"R&D-99.wpd"
FOB Chron:Reading File/DS File/Subject File
amendment, expand, R&D approval, concrete cleaning

Alcoa may request, with justification, to treat additional concrete core samples from Vernon, CA, Massena, New York, or from other facilities. Please note that the limit of this approval is for 500 gallons of PCB liquids or 70 cubic feet of PCB solids, or a total of 500 gallons of a mixture of PCB liquid and solids. This R&D approval was granted pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976 (TSCA), Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR 761.60(e) (48 Federal Register, 13185, March 30, 1983) (Alternate Method) and 40 CFR 761.60(j)(2)(iii).

This approval limits the testing of PCB contaminated material for the biodegradation studies for any one project to approximately 150 pounds of soil and/or sludge ranging in concentration from 10 ppm to 2,000 ppm PCBs; 100 gallons of water ranging in concentration from 1 ppb to 100 ppm PCBs; and two liters of oil ranging in concentration from 10 ppm to 5,000 ppm PCBs may be used. For the contaminated concrete studies, this approval limits the testing of PCB contaminated material for any one project to approximately 500 pounds of concrete core samples.

The handling, storage, and disposal of wastes from this project will be based on the PCB content of their original source of PCB contamination in accordance with the TSCA regulations. In this case, source is defined as the PCB material received at the ALCOA Technical Center from off-site ALCOA locations for treatability testing. Wastes generated must be disposed of in an EPA-approved PCB incinerator (40 CFR Part 761.70) or in an EPA-approved chemical waste landfill (40 CFR Part 761.75).

A final test report on each different project shall be submitted to the (National Program Chemicals Division) NPCD no later than 90-days after the completion date of testing, or after the expiration date of the permit, whichever comes first. Please direct matters concerning this subject to Hiroshi Dodohara of my staff at (202) 260-3959.

Sincerely,

John W. Melone, Director
National Program Chemicals Division

Enclosure

cc:

Ed Cohen
Region III

David Greenlaw
Region II

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPROVAL TO CONDUCT RESEARCH AND DEVELOPMENT TESTS
TO DISPOSE OF POLYCHLORINATED BIPHENYLS (PCBS)

ALUMINUM COMPANY OF AMERICA
ALCOA TECHNICAL CENTER
ALCOA CENTER, PENNSYLVANIA

R&D STUDIES TO DETERMINE THE EFFECTIVENESS
OF ENHANCED BIOLOGICAL DEGRADATION AND
CLEANING AND COATING TECHNIQUES
FOR PCB-CONTAMINATED CONCRETE AND OTHER MATRICES
PURSUANT TO 40 CFR 761.60(e) AND (j) FOR AUTHORIZED CONTINUED USE

BACKGROUND

On May 1, 1993, ALCOA submitted a request to conduct research and development (R&D) on the enhancement of biological degradation of PCB-contaminated waste matrices belonging to ALCOA in their ALCOA Technical Center in Pennsylvania. These studies will be carried out in controlled laboratory settings, either directly by or under the supervision of trained, ALCOA technical personnel. On September 9, 1998, Alcoa requested a R&D approval to determine the effectiveness certain cleaning and coating techniques on concrete floor core samples from the Vernon, California plant. Alcoa requested approval, on April 1, 1999, to test additional concrete floor core samples from the Massena Plant in Massena, New York. All evidence available suggests that these studies by ALCOA carried out in accordance with the conditions of this approval will not present an unreasonable risk to human health or the environment.

This approval is issued to the Aluminum Company of America (Alcoa), Alcoa Center, Pennsylvania, to conduct research and development (R&D) tests on the enhancement of biological degradation of PCB-contaminated waste matrices belonging to ALCOA and for determining the effectiveness of surface cleaning and coating techniques on PCB contaminated concrete, which are authorized for continued use at 40 CFR761.30(p). The concentration of PCBs in the concrete to be tested exceeds the limitation for self-implementation in 40 CFR 761.(j)(1)(iii) and requires approval prior written approval from EPA per §761.60(j)(2).

Authority

This approval to conduct R&D into PCB disposal is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976 (TSCA), Public Law No. 94-469, and the Federal PCB

Regulations, 40 CFR Part 761.60(e), (48 Federal Register, 13185, March 30, 1983) and 40 CFR 761.60(j)(1)(iii).

Effective Dates

This R&D approval will become effective on the date of signature and will expire December 1, 2000.

Proposed Tests

a. Biodegradation Research

ALCOA will study samples of solid and liquid wastes obtained from PCB-contaminated sites belonging to ALCOA to develop and evaluate techniques for the enhancement of biological technologies for later use in full- scale remediation of the contaminated sites. These studies will help determine the potential for the use of relatively low cost biological technologies to treat PCBs to environmentally sound levels without adverse by-products.

Research has shown that PCBs do biodegrade in the environment and in laboratory studies, but at a very slow rate. However, no one yet has demonstrated a process to EPA that can accelerate PCB biodegradation to rates necessary to make such a process commercially viable. In addition, even though the susceptibility to biodegradation of PCBs found in soil and sludge materials has been demonstrated, treatment of all PCB congeners to below certain plateau levels has been technically unachievable. Thus, physical and/or chemical pretreatment to increase bioavailability may enhance biodegradation by lowering achievable treatment levels for all PCB congeners.

There is evidence to suggest that the bioremediation of sparingly soluble, hydrophobic organic molecules, like PCBs, found in soil and sludge matrices, may be limited by the physical availability or proximity of these compounds to the microbial surfaces, rather than by the inability of the microorganisms to metabolize the compounds. If this is so, relevant physical characteristics of the PCB congeners in soils and sludges, such as adsorption/desorption rates and solubilities, can be compiled from the available literature and from laboratory studies, and then projections about the rates of biodegradation of the congeners can be made from the data.

When values for aqueous solubilities, octanol-water partition coefficients, and Henry's Law constants were compiled for the PCB congeners and correlated with the level of chlorination of the PCB congeners, the results were suggestive that, as the degree of chlorination and hence the molecular weight of the PCB congeners increases, the degree of bioavailability of the congeners should decrease. In addition, the concentration of PCB congeners remaining after traditional bioremediation should reach some irreducible plateau, and the distribution of the remaining PCB congener population should have shifted towards the more highly chlorinated congeners. This is exactly what was seen in General Electric's Hudson River studies carried out in the summer of 1991. The lower chlorinated congeners biodegraded most rapidly, and the process stopped at low concentrations.

In the General Electric and in other PCB bioremediation studies, the residual PCB congeners, while still physically present in the soil/sludge matrix, may for all practical purposes be immobilized or biostabilized. Therefore, enhancement of the soil/sludge matrix by physical and/or chemical means, such as with the addition of surface active agents or chemical oxidants, may increase the bioavailability of the target organics (PCBs) and lead to the attainment of lower residual concentrations. Likewise, the addition of an organic compound with a chemical structure similar to that of the contaminant may enhance and stimulate the growth of microbial populations that could readily cometabolize the target compounds. These physical and/or chemical process approaches may be applied either before or during bioremediation. They are also compatible with the in-situ bioremediation approaches being considered by ALCOA for use in full-scale site remediations.

ALCOA plans to evaluate ways to increase PCB bioavailability and to enhance PCB biodegradation with the following research:

-- soil/sludge sorption testing in combination with surfactant screening;
-- chemical oxidant screening;
-- soil pan degradation studies simulating land treatment;
-- biological slurry reactor testing;
-- fluidized carbon bed reactor studies for biologically treating wastewater; and
-- adsorption/desorption testing of soil/sludge, or oil matrices to determine site-specific partition coefficients for PCB congeners.

As part of this treatability testing program, ALCOA plans to develop and improve its in-house capability for identifying and quantifying PCBs on a congener-specific basis with gas chromatography and mass spectrometry.

b. Contaminated Concrete Research

Alcoa plans to obtain fifteen 8-inch-diameter concrete core samples for laboratory tests from the floor of the 5000-ton press pit area at the Vernon Works (EPA Generator ID No. CAD074126681, Vernon, CA). Four 2-inch diameter samples will be collected from the same area for characterization of PCB contents. The 2-inch core samples will be analyzed for PCBs as a function of depth. Each core will be divided into 1- inch sections and analyzed separately for Aroclors. Cores samples will be 5 to 8 inches in length and weigh a total not to exceed 500 pounds. The samples may contain PCB levels up to 11,000 ppm which is expected to be concentrated in the top 2 inches of concrete.

An additional fifteen 8-inch-diameter concrete core sample from the Massena Plant in Massena, New York (EPA ID# NYD002232304), will be acquired to test the effects of various cleaning techniques on the migration and distribution of hydraulic oils in concrete. Upon completion of the study, all PCB contaminated wastes and debris will be sent to an EPA-approved TSCA incinerator for disposal. Other locations which may be utilized for research include plants in Alcoa Center, Pennsylvania; Cleveland, Ohio; Riverdale, Iowa; Lafayette, Indiana; Lebanon, Pennsylvania; Alcoa, Tennessee; and Newburgh, Indiana. This approval

applies to other Alcoa facilities, subject to notification to EPA of intent to perform R&D studies and to submission of EPA I.D. numbers for the other Alcoa facilities.

Cleaning Techniques

Eight of the 8-inch diameter cores will be tested for cleaning techniques and PCB "bleedback" to the surface. Initially, all samples will be wipe-tested to determine the magnitude of surface PCB contamination. The surface of the samples will then be cleaned using three different cleaning techniques which have been employed at other Alcoa facilities, using two cores for each cleaning techniques. One of the three techniques will be duplicated on the remaining two cores. After cleaning, the duplicate cores will be "painted" on the surface with a small amount of clean phosphate ester hydraulic oil currently in use by Alcoa. All the cores will then be covered with aluminum foil.

Surface wipe testing will be performed at approximately two week intervals for a period of eight months. At the end of the eight month period, a 2-inch core sample will be taken from each of the 8-inch core samples. The 2-inch cores will be divided into 1-inch sections and each section will be analyzed for PCB Aroclors. All wipe tests will use conventional surface wipe testing method for PCBs.

Coating Techniques

Six 8-inch core samples will initially be wipe tested to determine the extent of PCB contamination. The surface of each core will be cleaned using a technique selected from those tested in the first phase. Three different epoxy coating techniques will be applied to each set of two cores. The cores will then be covered with aluminum foil.

Surface wipe testing will be performed at approximately two week intervals for a period of eight months. At the end of the eight month period, a 2-inch core sample will be taken from each of the 8-inch core samples. The 2-inch cores will be divided into 1-inch sections and each section will be analyzed for PCB Aroclors. All wipe tests will use conventional surface wipe testing method for PCBs.

Bleedback Studies

Alcoa intends to assess the effects of diverse cleaning techniques on the migration and distribution of hydraulic oils in concrete contaminated with oil to depths greater than two inches from the surface. The goal is to understand the phenomenon of bleedback, i.e., the migration of oil from the deeper contaminated concrete, which acts as a reservoir, to the surface, recontaminating what has already been cleaned. Oil seems to be a significant contributor to PCB migration in concrete contaminated with PCB-contaminated mixtures. This study intends to clarify factors that control oil movement in concrete.

The concrete samples from Massena will be cleaned and the rate of bleedback will be studied. Three distinct cleaning techniques will be applied to three sets of three concrete core samples. A fourth sample in each set of cleaning technique, will initially be exposed to abrasive blasting followed by cleaning. Surface wipe sampling will be performed every two days for the

first two weeks after completion of cleaning, and at intervals of about two weeks thereafter for a period of three months. Hexane extracts of these samples will be analyzed as a measure of the total amount of oil present.

Conditions of Approval

1. Advance Notification: A thirty-day advance notice of the proposed tests must be provided to the Regional Administrator of EPA Region III, the state of Pennsylvania, and any local officials governing the site where the ALCOA Technical Center is located, and to the EPA Regional Offices, the state and local agencies where the sampling sites are located. These notices must briefly outline the treatability testing program, and include the approximate dates of the testing and the estimated length of the testing. A sample form is enclosed. Copies of these letters must be sent to the Chief, Fibers and Organic Branch (7404) at EPA Headquarters to be kept on file.

2. Other Permits and Approvals: Prior to commencing the tests, ALCOA must obtain any necessary Federal, state or local permits or approvals. During the course of the testing, ALCOA shall comply with all conditions and requirements of such permits or approvals.

3. Feedstock and Restrictions:

a. Biodegradation Research : PCB- contaminated soil, sludge, water and/or oil samples used in these treatability studies will be obtained from PCB- contaminated sites owned by ALCOA or its subsidiaries that are located within the continental United States or its territories. For any one project, a maximum of approximately 150 pounds of soil and/or sludge ranging in concentration from 10 ppm to 2,000 ppm PCBs may be used. For any one project, a maximum of 100 gallons of water ranging in concentration from 1 ppb to 100 ppm PCBs may be used. For any one project, a maximum of two liters of oil ranging in concentration from 10 ppm to 5,000 ppm PCBs may be used.

Solid and liquid waste matrices used in the treatability studies will be sampled and analyzed for PCBs with Gas Chromatography and/or Mass Spectrometry at the beginning of the studies and at intervals for the duration of the studies until the treatment has reduced the concentration of PCB's to less than 3 parts per billion for water; 2 ppm per peak for soils, sediments and sludges; and 10 micrograms per 100 square centimeters for non-porous surfaces. While these levels cited for the various media refer to TSCA cleanup levels, part of the treatability testing is to test various biodegradation approaches and enhancements that may not meet the cleanup levels cited. Regardless of whether the cleanup levels are attained or not, all material used in the studies, both treated and untreated, will be incinerated in a TSCA- approved incinerator when the studies are completed.

b. Contaminated Concrete Research: Alcoa will be limited to about 500 pounds of concrete contaminated with PCBs. Core samples for treatment will be 8 inches in diameter and 5 - 8 inches long and core samples for characterization will be 2 inches in

diameter and 5 - 8 inches long. Alcoa may request, with justification, to treat additional concrete core samples from Vernon, CA, Massena, NY or from other facilities. This approval applies to other Alcoa facilities, subject to notification to EPA of intent to perform R&D studies and to submission of EPA I.D. numbers for the other Alcoa facilities.

4. Process Waste Restrictions: All waste generated as a result of this process must be disposed of as if it contained the original concentration of the feedstock received at the ALCOA Technical Center from off-site ALCOA locations, unless through representative sampling and analysis, EPA can verify that the waste contains non-detectable concentrations of PCBs (defined as less than 2 parts per million per congener quantitated with the Dye Color Manufacturers Association [DCMA] Standard for all matrices except water, which must contain less than 3 parts per billion total).

This approval does not obligate EPA to take samples. In the event that EPA does not take samples, all PCB waste and treated residues generated during the test(s) must be disposed of by approved TSCA incineration according to 40 CFR 761.70 or by chemical waste landfilling according to 40 CFR 761.75.

5. Process Monitoring/Recordkeeping: Plans for sampling and analysis and quality assurance are described in ALCOA's permit application on file at EPA Headquarters. Sampling and analysis will be conducted on all PCB- contaminated solid and liquid matrices used in this R&D project to establish baseline conditions and subsequently to monitor various parameters during the project.

For the biodegradation studies, the results of all sampling, analytical, and monitoring activities must be recorded throughout the R&D activity. The results include the following:

a. initial PCB concentration of all samples of solid and liquid matrices analyzed;

b. final PCB concentration of all samples of solid and liquid matrices analyzed;

c. rate(s) of PCB degradation monitored in study samples;

d. the PCB concentration of any air samples analyzed to measure potential PCB losses through volatilization;

e. any initial and final toxicity tests; and

f. specific partition coefficients between soil/sludge and water, and between oil and water.

6. R&D Test Report: A test report for each project -shall be submitted to EPA Headquarters no later than 90 days after the completion date of testing or after the expiration date of the permit, whichever comes first. All test results and related information on this R&D project shall be

incorporated into the test report to be submitted to Fibers and Organics Branch (7404) for evaluation. The R&D test reports shall include, at a minimum, the following items:

a. Certification Letter. This letter, signed by an authorized official of ALCOA, must certify on behalf of the applicant that the tests were carried out in accordance with the approved conditions of this permit, and that the results of all determinations are submitted in the report. Any changes or deviations from the conditions of this permit must be authorized in advance by the permitting authority and documented in writing in the report.

b. Detailed discussion of all process operations, operational problems, if any, and corrective actions.

c. Chronology of significant events.

d. Quality Assurance (QA) Report. This report should address all the QA objectives, including whether or not precision and accuracy objectives were met, as well as results of quality control samples, performance audit samples, and systems audits.

e. Waste Handling Documentation. ALCOA should provide documentation, such as copies of manifests and certificates of destruction, to show that all wastes generated during the operation of the study were properly disposed of according to the regulations found in the Toxic Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA), and the Clean Water Act (CWA). All PCB waste and treatment residues generated during the test(s) must be disposed of by approved TSCA incineration according to 40 CFR 761.70, or by chemical waste landfill according to 40 CFR 761.75.

7. Facility Inspection: EPA employees shall have access to the ALCOA laboratories during the tests for purposes of inspection, observation, or sampling. This access is subject to the normal safety requirements placed on ALCOA personnel.

8. Facility Security: The ALCOA laboratories shall be secured (e.g., fence, alarm system, etc.) to restrict public access to the area. Any personal injury occurring as a result of the R&D activities must be reported to the EPA Region III PCB Coordinator, Ed Cohen (215-597-7668) (Fax Number 215-597-3156), by the next regular business day.

9. Safety and Health: ALCOA must take all necessary precautionary measures to ensure that the operation of the treatability studies on enhancement of PCB biodegradation comply with the applicable safety and health standards as required by Federal, state, and local regulations and ordinances.

10. PCB Spills: Any spills of PCB materials shall be promptly controlled and cleaned up in accordance with the guidance given in the TSCA PCB Spill Cleanup Policy and procedures (see 52 Federal Register, 10688, April 2, 1987). In addition, a written report describing the spill, operations involved, and cleanup actions must be submitted to EPA Region III within five (5) business days.

PCB spills must be reported in accordance with the PCB spill reporting requirements prescribed under Section 311 of the Clean Water Act for discharges to navigable waters; under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund); and any other applicable Federal, state, or local reporting requirements.

11. Personnel Training: ALCOA is responsible for ensuring that personnel directly involved with handling PCBs or PCB-contaminated material during the ALCOA treatability studies are demonstrably familiar with the general requirements of this R&D approval. At a minimum, this information includes:

a. the type of material that may be treated during the testing;

b. basic reporting and recordkeeping requirements under this R&D approval and the location of records at the test site;

c. notification requirements;

d. waste disposal requirements for process wastes generated during the treatability testing;

e. basic health and safety measures to be used during all treatability testing.

This R&D permit must be available upon request for use by ALCOA personnel involved with the study.

12. PCB Transport Restrictions: PCB-contaminated soil and concrete not involved in the experiment may not be transported from the ALCOA Technical Center, except for purposes of proper disposal. PCB material transported for purposes of disposal must be marked in accordance with 40 CFR Part 761.40 and the DOT requirements of Title 49 CFR Part 172. Such requirements include placarding and labeling all PCBs.

13. Process/Equipment Modifications: Any departure from the conditions of this R&D approval, or from the terms of the application submitted by ALCOA, must receive prior written-authorization from EPA Headquarters. Verbal requests must be followed within ten working days by a written request from ALCOA describing all modifications. In this context, modifications are defined as any deviations from the permit conditions or from the data and materials that have been received by this Agency from ALCOA regarding the operation of this treatability testing program.

14. Permit Effective Dates: This R&D approval shall become effective on the date of signature and shall expire on December 1, 2000.

Each year, ALCOA may apply for a renewal of the approval within three months of the expiration data. Based on the R&D test report submitted by ALCOA at the time of the renewal application, EPA shall make a determination as to whether to renew this R&D approval.

Under the above conditions, and given the circumstances under which the R&D tests will be conducted, EPA Headquarters' National Programs Chemicals Division finds, pursuant to 40 CFR Part 761.60(e), that these tests will not present an unreasonable risk of injury to health or the environment.

Approval to conduct R&D on the enhancement of biological degradation of PCBs and cleaning and coating techniques in contaminated matrices is hereby granted to ALCOA, subject to the conditions expressed herein, and consistent with the materials and data included in the application from ALCOA. Each party must comply with all terms and conditions of this approval, and failure to do so will be considered a violation of the PCB Rules and the Toxic Substances Control Act. This R&D approval is valid only when the research is conducted at the ALCOA Technical Center in Pennsylvania.

Sincerely,

_____

Date

_____

John W. Melone, Director
National Program Chemicals Division

APPENDIX

EXAMPLE THIRTY DAY NOTIFICATION FORM

****

Company Name, Address, Phone Number, and Contact Person:

Person, Organizational Affiliation/Title, and Phone Number for:

EPA Regional Contact:
State Contact:
Local (Town/City/County) Contact:

Nature of the Disposal Activity:

Kind of PCB Disposal Process:

Kinds of Material Containing PCBs:

Numbers and Sizes of Pieces of Equipment Containing PCBs:

Quantity of Solids and/or Volume of Liquids Containing PCBS:

Concentration(s) of PCBs in the Material to be Treated:

Location

Street Address or Other Identifier for All Sites:

Telephone Contact and Address for Site Manager:

Time of Processing

Date (s) :

Time (s) :

1999 April 1

CERTIFIED MAIL

Mr. Hiroshi Dodohara
Office of Toxic Substances
U.S. Environmental Protection Agency
Washington, D.C. 20460

Re: Approval for Additional PCB Contaminated Concrete Cleaning/Coating Research

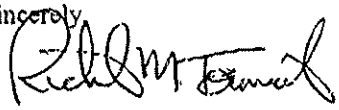
Dear Mr. Dodohara:

Alcoa Technical Center (Alcoa Center, PA 15069-0001, EPA ID# PAD004393138) is requesting approval to test approximately 500 pounds of PCB contaminated concrete from its Massena Operations (Massena, NY 13662, EPAID# NYD002232304). This proposed testing would be performed in conjunction with ongoing PCB research and development (R&D) at the Alcoa Technical Center (ATC). This request is being made as required by the conditions (Condition 3.b. Feedstock and Restriction for Contaminated Concrete Research) of the ATC PCB R&D approval, issued on November 30, 1998. The purpose of this testing is to determine the effects of diverse cleaning techniques on the migration and distribution of hydraulic oils in concrete contaminated with oil from the surface to depths greater than two inches.

Also, per the ATC PCB R&D Conditions of Approval (1. Advance Notification), this letter serves as thirty-day advance notice of these proposed R&D activities. The quantity of PCBs to be treated, technology, material properties, and proposed quantities are listed in the attached plan. The study will be completed within a one-year time frame. Record keeping and storage, manifesting, and disposal of PCB wastes will be in compliance with all applicable regulations and ATC's PCB R&D approval conditions.

If additional data is required or if you have any questions, comments, or concerns please contact me at (412) 553-4044.

Sincerely,



Richard M. Tomicek
Consultant
Solid & Hazardous Waste
EHS Services North America

Cc w/attachment:
Mr. Toney Baney, USEPA, Chief, Fibers and Organics Branch (Certified Mail)
Mr. Edward Cohen, USEPA Region III (Certified Mail)
Mr. Robert Popichak, PADEP (Certified Mail)
Mr. David Greenlaw, USEPA Region II (Certified Mail)
Mr. Darrell Swerdoski, NY State DEC (Certified Mail)
Sharon Shoppell, Massena Operations (E-Mail)
Bruce Konkoski, Massena Operations (E-Mail)
John Rind, ATC, D-EHS (E-Mail)
John Smith, ATC, C-ESTD (E-Mail)
Margaret Tabe, ATC, C-ESTD (E-Mail)
Dennis Fulmer, ATC, C-ESTD (E-Mail)
David Dzombak, CMU, Dept. of Civil and Environmental Engineering (E-Mail)
Sandy Harvey, PGH (E-Mail)

PLAN TO ASSESS THE CLEANING OF PCB CONTAMINATED HYDRAULIC FLUID FROM CONCRETE

Research Contacts
David A. Dzombak
Carnegie Mellon University
Dept. of Civil and Environmental Eng.
Pittsburgh, PA 15213
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Fax: (412) 268-7813
Email: dzombak@cmu.edu

John R. Smith
Env. Science and Tech. Dev. Group
Alcoa Technical Center
Alcoa Center, PA 15069
Phone: (724) 337-5432
Fax: (724) 337-5315
Email: john.r.smith@alcoa.com

EPA Headquarters Contact
Mr. Hiroshi Dodahara, USEPA, Office of Toxic Substances, (202) 260-3959

EPA Regional Contacts
Mr. David Greenlaw, USEPA Region II, (732) 906-6817
Mr. Edward Cohen, USEPA Region III, (215) 566-2147

State/Local Contacts:
Mr. Robert Popichak, PADEP, (412) 442-4000
Mr. Darrell Swederski, NY State DEC, (315) 785-2513

Overview and Objectives
The goal of this project is to assess the effects of diverse cleaning techniques on the migration and distribution of hydraulic oils in concrete contaminated with oil from the surface to depths greater than two inches. The samples to be employed will have less than 10,000 ppm PCB content. The goal of the research is to develop understanding of the phenomenon of bleedback, i.e., the migration of oil from the deeper contaminated concrete, which acts as a reservoir, to the surface of the slab, recontaminating what has been already cleaned. Oil migration appears to be a significant contributor to PCB migration in concrete contaminated with PCB-oil mixtures. The Massena project aims to elucidate the factors that control oil movement in concrete.

To achieve this goal, approximately fifteen 8-in. diameter low-PCB, oil-contaminated concrete core samples will be acquired from Massena Plant for use in the laboratory tests for estimating the rate of bleedback, and the influence of different cleaning techniques on bleedback. Cores will be obtained from the same proximity of the floor in a press area, and a 2-in. diameter sample will be also acquired in order to determine the profile of oil versus depth.

The oil stained concrete core samples from Massena will be cleaned, and the rate of bleedback will be studied. Each of three cleaning techniques will be applied to three oil-contaminated, 8-in diameter samples. In a fourth sample for each cleaning technique, abrasive blasting will be performed first. Follow-up surface wipe testing of the core surfaces will be performed every two days for the first two weeks after the completion of cleaning, and at intervals of approximately two weeks thereafter for a period of three months. Hexane extracts of these samples will be analyzed with an infrared spectrometer, as a measure of the total amount of oil present.

ALCOA

Alcoa Inc.
201 Isabella Street
Pittsburgh, PA 15212-5858

FAX # (412) 553-4822
FAX# ActNet (8) 225-4822

TO: HIROSHI DODOHARA
Company: USEPA - OFFICE OF TOXIC SUBSTANCES
FAX#: (202) 260-1724
DATE: 5-11-99
NO. of PAGES: 3 (including cover sheet)
FROM: RICH TOMICEK (412) 553-4044

MR. DODOHARA,

ATTACHED IS THE LETTER REQUESTING APPROVAL TO PERFORM R&D ON CONCRETE CAKE SAMPLES AS REQUIRED BY ATC'S CURRENT PERMIT. PLEASE CALL ME WITH ANY QUESTIONS OR COMMENTS.

THANKS

RICH TOMICEK

If you have any problems receiving this transmission, please contact _____

ROUTING SLIP

		DRAFT REVIEW		FINAL REVIEW		
#	NAME	INITIAL	DATE	ACTION	INITIAL	DATE
1	John Smith			FYI		
2	Tony Baney			Concur		
3	Pat Miller			Login		
4	John Melone			Sign		
5	Pat Miller			Logout		
6						
7						
8						
9						

Nature of Item Being Routed:

R&D permit for Alcoa for studies on concrete samples from Massena, NY. Original R&D limited Alcoa to study concrete samples from Vernon, CA. Approval was extended for an additional year to complete this study.

FROM:			DATE	TELE #	ROOM #
H. Dodohara			5/12/99	260-3959	ET-837